

Appln No.: 10/524,122
Amendment Dated: April 2, 2007
Reply to Office Action of November 2, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A stairlift comprising a stairlift rail; a carriage mounted on said rail for movement there along; a chair mounted on said carriage; over-speed braking means operable to brake said carriage from further movement on said rail when the speed of said carriage on said rail exceeds a pre-determined maximum speed, and angle determining means for determining out-of-level positions of said chair, said angle determining means being capable of causing actuation of said over-speed braking means.
2. (previously presented) A stairlift as claimed in claim 1 wherein said over-speed braking means comprises speed sensing means operable to sense, electronically, the speed of said carriage along said rail.
3. (previously presented) A stairlift as claimed in claim 2 wherein said speed sensing means comprises a roller in rolling contact with said rail; and means to determine the speed of rotation of said roller.
4. (previously presented) A stairlift as claimed in claim 3 wherein said speed sensing means comprises at least one magnet which rotates with said roller; and a pick up operable to generate an electromagnetic signal from the passage of said magnet thereby, said pick-up providing a speed output signal representative of the speed of rotation of said roller.
5. (previously presented) A stairlift as claimed in claim 4 wherein, in the event of said speed output signal indicating a speed in excess of the pre-determined maximum carriage speed, said over-speed braking means triggers a solenoid to engage said over-speed braking means with said roller and, thereby, cause a braking member to engage with said rail.
6. (previously presented) A stairlift as claimed in claim 1 wherein said over-speed braking means is provided, in part, by a microprocessor, said microprocessor being programmed to receive a speed output signal and, in response to said speed output signal indicating a speed in excess of said pre-determined carriage speed, to generate a command to trigger a solenoid to engage said over-speed braking means.
7. (previously presented) A stairlift as claimed in claim 6 wherein said microprocessor is further programmed to receive a signal from said angle determining means and, in response to said angle

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determining means indicating a chair angle in excess of a predetermined angle from the horizontal, to generate a command to trigger said solenoid.

8. (previously presented) Control means for a stairlift, said stairlift comprising: a stairlift rail having rail sections which, when installed, are arranged at different angles to a horizontal plane; a carriage mounted on said rail for movement there along; a chair pivotally mounted on said carriage; braking means operable to brake said carriage with respect to said rail; speed sensing means operable to sense the speed of said carriage along said rail; and angle sensing means operable to sense positions of said chair at which the angle thereof with respect to said horizontal plane is at or in excess of a limit; said control means including a microprocessor operable to receive signals from said speed sensing means and from said angle sensing means, and to generate a command to operate said braking means in response to said speed sensing means sensing a carriage speed in excess of a predetermined maximum, or said angle sensing means sensing a chair angle in excess of a predetermined maximum.

9. (previously presented) A method of controlling a stairlift, said stairlift comprising: a stairlift rail having rail sections which, when installed, are arranged at different angles to a horizontal plane; a carriage mounted on said rail for movement there along; a chair mounted on said carriage; braking means operable to brake said carriage with respect to said rail; speed sensing means operable to sense the speed of said carriage along said rail; and angle sensing means operable to sense positions of said chair at which the angle thereof with respect to said horizontal plane is at or in excess of a limit; said method comprising the steps of monitoring the speed of said carriage along said rail and monitoring the angle of said chair with respect to the horizontal and, in the event either said speed or said angle depart from predetermined limits, causing said braking means to be operated.

10. (previously presented) A method of testing the operation of an over-speed governor included within a stairlift carriage, said governor acting in combination with electronic speed sensing means and a governor actuation circuit, said method comprising the steps of simulating an electrical signal indicative of carriage speed, applying said signal to said governor actuation circuit and observing a response of said governor.

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11. (currently amended) A stairlift carriage for movement along a stairlift rail, said carriage comprising a drive motor operable to drive said carriage along side rail; an over-speed governor operable to brake said carriage with respect to said rail; limit engagement means operable independently of said over-speed governor and positioned to physically engage ultimate mechanical limit stops provided at each end of the rail, said ultimate stops physically preventing displacement of said carriage from said rail, wherein said over-speed governor and said limit engagement means actuate a common isolation switch thereby cutting power to said drive motor.

12. (previously presented) A carriage as claimed in claim 11 wherein said limit engagement means conveys a charging current from said rail to a battery located within said carriage.

13. (previously presented) An electronics based over-speed governor for braking a stairlift carriage with respect to a stairlift rail, said governor comprising: electronic speed sensing means operable to sense the speed of said carriage along said rail; a braking member included within said carriage and displaceable into contact with said rail; and a solenoid actuated in response to an over-speed state being sensed by said speed sensing means to cause displacement of said braking member, wherein, when said carriage is stationary, said solenoid may be energised and de-energised without causing displacement of said braking member.

14. (previously presented) A stairlift carriage comprising the over-speed governor as claimed in claim 13, wherein said solenoid is energised and de-energised each time power is respectively supplied to or removed from, said carriage.

15-19 (Canceled)

20. (previously presented) A stairlift as claimed in claim 5, wherein said solenoid is energised and de-energised each time power is respectively supplied to or removed from, said carriage.